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ABSTRACT

This study was conducted to determine what needs to be done to make work assignments for student trainees in a cooperative education program at the U.S. Army Missile Command interesting and challenging enough to assure the maximum retention of these students as full-time employees when they graduate. A questionnaire and evaluation form was devised and distributed to 79 of the student trainees at all levels of the program. The form was designed to elicit: (1) the relationship between work assignments and the academic phases of the program; (2) the level of work assignments; (3) the students' relationships with supervisors and co-workers; (4) the students' knowledge of the Redstone Arsenal complex and the U.S. Army Missile Command's organizational mission assignments; (5) attitudes of students toward the cooperative program; and (6) students' plans for the future, specifically, immediately after graduation. It was found that (1) nearly half of the students felt that the work needed to be more related to classroom study; (2) one-third of the students do not find their work interesting or challenging; (3) students seem to feel the supervisors are poorly organized in relation to their jobs and that co-workers are more helpful in transmitting knowledge; (4) students' knowledge of the mission assignments and complex seems to be minimal; (5) students seem to be generally satisfied with the cooperative program; and (6) fewer students were planning to stay at the Redstone Arsenal after graduation than hoped for. (HS)

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# STUDY OF THE EFFECTIVENESS OF A COOPERATIVE EDUCATION PROGRAM

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JUN 1970

# A STUDY OF THE EFFECTIVENESS OF A COOPERATIVE EDUCATION PROGRAM

This study was conducted to determine what can be done to make work assignments for student trainees interesting and challenging enough to assure the maximum retention of these students as full-time employees when they graduate.

U. S. Army Missile Command
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# A STUDY OF EFFECTIVENESS OF THE COOPERATIVE EDUCATION PROGRAM

## THE CO-OP QUESTIONNAIRE AND EVALUATION OF THE RESULTS OF ITS ADMINISTRATION

This questionnaire was specifically designed to measure the on-the-job aspect of the Cooperative Education Program for the purpose of determining areas in the operation of the program which may be improved. The administration of this measurement device was a technique recommended by the Cooperative Education Program Steering Committee in its effort to isolate the strengths and weaknesses of the co-op program in these six general areas:

a. The relationship between work assignments and the academic phases of the program.

b. The level of work assignments.

c. The students' relationships with supervisors and co-workers.

d. The students' knowledge of the Redstone Arsenal complex and the U. S. Army Missile Command's organizational mission assignments.

e. Attitudes of students toward the MICOM co-op program.

f. Students' plans for the future; specifically, immediately after graduation.

The Co-op Questionnaires were distributed to 79 participating student trainees at all levels of co-op experience and classroom study. By the end of December 1969, 65 questionnaires had been completed and returned. It was believed that a higher degree of validity in their answers might be obtained if the co-ops were requested to neither sign nor place any other identifying mark on the questionnaire. The only categorical information that they were requested to give was

their college class levels and the number of work periods they had completed at this installation.

The questionnaire had not been given an actual trial run to determine the validity of each item before administering it to the students. The analysis of the information received uncovered two items which were of insignificant value for this study, since the data would be of interest only as it concerned the specific individual answering the item. These items, numbered 48 and 49, will be eliminated from the questionnaire before using it again as an unsigned evaluation tool.

Various methods for collecting the information were utilized when composing the questionnaire, such as: multiple-choice items, yes-no and agree-disagree items, ranking by importance, short-answer items, and essay questions.

A tabulation of information was made on all forced-choice items and, insofar as possible, on the essay items. In the attached item-by-item "A Tabulation of Information Gathered," the responses were summarized on the basis of the number of work-periods completed by each student. This was done in order to isolate any marked differences or trends in the answers which might appear at any particular level of experience. The total summation for each item combines all seven experience-levels (work periods) to give the over-all comparison standard, as established by the opinions of this group of students.

Again, the main objective of this study was to identify areas in the operation of the co-op program which may need to be improved. Hence, there follows a selection of those findings considered to be the most significant starting points from which to promote potential improvements in each of the above six general areas.

a. Relationship between work and academic phases:

Twenty-eight students (43%) indicated that only "sometimes" their work related to their college studies; 3 students (nearly 5%) felt that there is no relationship between the two phases.

Twenty-six students (40%) felt that most of their work experiences have not been within their major fields of study.

b. The level of work assignments:

Ten students (15%) stated that most of the time the work being assigned is below their ability level; 41 students (63%) indicated that this situation occasionally occurs. The greatest frequency of such responses were given by students in their first four work periods.

Twenty-two students (34%) classified their work as being repetitious or tedious.

Sixteen students (25%) stated that at times their work assignments are "over their heads." The percentage of frequency for these responses increased from about 11% during the first work period to 50% during the sixth and seventh work periods.

Twenty-six students (40%) claimed that their day-to-day work was not well planned and lacked effective accomplishments.

c. The students' relationships with supervisors and co-workers:

Fourteen students (22%) felt that their supervisors are too concerned with production to provide proper training. Another 14 students have been disappointed because their supervisors fail to rely on the students' capabilities. Six students (10%) felt that their supervisors expect effective performance with too little guidance.

Sixteen students (25%) believed that their co-workers think of the co-op as a Jack-of-All-Trades; while 15 students felt they are looked upon as part-time temporary employees rather than pre-professionals in their planned career fields.

d. Students' knowledge of MICOM's organizational mission assignments:

Sixteen students (25%) were unable to explain the mission of the Research and Engineering Directorate.

Twenty-six students (40%) were unable to explain the mission of the Procurement and Production Directorate.

Thirty-six students (55%) were unable to explain the mission of the Supply and Maintenance Directorate.

Thirty-eight students (58%) were unable to explain the mission of the Missile Intelligence Directorate.

Thirty students (46%) were unable to explain the mission of the Arsenal Support Operations Directorate.

Five students (8%) were not fully knowledgeable of the objectives of the Cooperative Education Program.

e. Attitudes of the students toward the MICOM co-op program:

Thirteen students (20%) stated that they would not encourage their friends to enter the MICOM Co-op Program.

Five students (8%) claimed that they would not recommend Cooperative Education to their friends.

Sixteen students (25%) admitted that they were unable to explain how the work they were doing relates to the work of other divisions.

Four students (6%) stated that if, at the beginning of each work period, they could choose the place where they would work, they would transfer to a different employer; 15 students (23%) said they would go to another organizational element; and 17 students (26%) said they would change to another division within their element.

f. Students' plans for the future; specifically, immediately after graduation:

Two students were undecided as to their plans. One of these had completed his second work period and the other, his fourth.

Eight students (12%) stated that they would not consider returning to MICOM after graduation. One of these had completed his second work period; one had completed his third; five had completed their fourth work period; and one had completed his sixth.

Nine students (14%) felt that they would probably seek employment nearer home. Five of these had just completed their first work period; one had completed his second; two their third; and one had completed four work periods.

Eighteen students (28%) believed they would probably become full-time government employees, but not necessarily at this installation. One of these had completed his first work period; eight had completed their second; one his third; four their fourth; two their fifth; one his sixth; and one was completing his seventh work period.

Twenty-eight students (43%) claimed they would want to return to MICOM as full-time employees. Four of these had completed their first work period; five their second; nine their third; four their fourth; three their fifth; two their sixth; and one was completing his seventh work period.

## SUMMARY

It is apparent that the study has exposed certain conditions which should be modified or corrected, if the program is to provide the challenging and interesting work experiences which relate to the students' academic fields of study.

These conditions are as follows:

a. Nearly one-half of the students feel that more of their work could be related to their study majors. Three-fourths of the time, even when their work is related to the students' major fields, in their opinion the duties are below their abilities to perform.

b. In contrast, one-fourth of the students claim that their work assignments are often too far above their capability levels for them to understand how to proceed.

c. One-third of the students classify their work as less than interesting or challenging most of the time.

d. More than one-third of the trainees feel that their daily work is poorly planned by their supervisors and that their work does not increase in difficulty and responsibility with each work period.

e. About three-fourths of the students expressed some lack of direct relationship between themselves and their supervisors. In their opinion, most of their job knowledge is coming from their co-workers, or as a result of their own efforts (this condition may or may not, in some cases, be considered a weakness).

f. The trainees' knowledge of functional responsibilities of MICOM organizational elements is quite limited. It is apparent that whatever knowledge is gained during their first few days of orientations and familiarization with charts and facilities, most of it appears to be soon forgotten in their day-to-day shop involvement.

g. In expressing their general attitudes toward the co-op program, the majority of the students appeared to be satisfied with their situations. However, about one-fourth of them were apparently somewhat dissatisfied with a variety of both real and unreal reasons.

h. When asked to express their plans for after graduation, the responses fell short of the desired retention goal for co-op graduates.

## PROPOSED ACTION

The Cooperative Education Program Steering Committee will examine the analysis of the information gathered from the questionnaires. A recommended plan of action will be developed to correct or modify those conditions which, when changed, should improve and strengthen the total MICOM Cooperative Education Program.

A TABULATION OF INFORMATION GATHERED
FROM THE CO-OP QUESTIONNAIRES

1. Is work directly related to college studies?

| WORK PERIOD | NOT AT ALL | SOMETIMES | USUALLY | ALWAYS |
|---|---|---|---|---|
| 1 | 2 | 3 | 5 | |
| 2 | | 7 | 8 | 1 |
| 3 | 1 | 6 | 5 | 1 |
| 4 | | 8 | 6 | 1 |
| 5 | | | 3 | 2 |
| 6 | | 2 | 2 | |
| 7 | | 2 | | |
| TOTALS | 3 | 28 | 29 | 5 |

2. Is work below your level of ability?

| WORK PERIOD | NEVER | AT TIMES | MOST OF THE TIME |
|---|---|---|---|
| 1 | 2 | 8 | |
| 2 | 2 | 9 | 5 |
| 3 | 2 | 9 | 2 |
| 4 | 3 | 10 | 2 |
| 5 | 4 | 1 | |
| 6 | | 3 | 1 |
| 7 | 1 | 1 | |
| TOTALS | 14 | 41 | 10 |

3. Does work approach a professional level?

| WORK PERIOD | NEVER | OCCASIONALLY | OFTEN |
|---|---|---|---|
| 1 | 2 | 7 | 1 |
| 2 | 5 | 5 | 5 |
| 3 | 2 | 6 | 5 |
| 4 | 2 | 12 | 1 |
| 5 | | 1 | 4 |
| 6 | 1 | 3 | |
| 7 | | 2 | |
| TOTALS | 12 | 36 | 17 |

4. How often do you see what's going on in parts of the Arsenal other than where you work?

| WORK PERIOD | NEVER | OCCASIONALLY | WEEKLY | MONTHLY |
|---|---|---|---|---|
| 1 | 2 | 7 | 1 | |
| 2 | 6 | 7 | 3 | |
| 3 | 2 | 8 | 2 | 1 |
| 4 | 2 | 10 | 2 | 1 |
| 5 | 2 | 2 | 1 | |
| 6 | 2 | 1 | 1 | |
| 7 | | 2 | | |
| TOTALS | 16 | 37 | 10 | 2 |

5. Which word best describes the work you do?

| WORK PERIOD | CHALLENGING | TEDIOUS | DIVERSIFIED | REPETITIOUS |
|---|---|---|---|---|
| 1 | 2 | | 6 | 2 |
| 2 | 2 | 1 | 6 | 7 |
| 3 | 2 | | 7 | 4 |
| 4 | 2 | 2 | 9 | 2 |
| 5 | 2 | | 2 | 1 |
| 6 | | 1 | 1 | 2 |
| 7 | 1 | | 1 | |
| TOTALS | 11 | 4 | 32 | 18 |

6. Your co-workers apparently think of you as a:

| WORK PERIOD | TECHNICIAN | PART TIME EMPLOYEE | POTENTIAL PROFESSIONAL | JACK-OF-ALL TRADES |
|---|---|---|---|---|
| 1 | | 2 | 6 | 2 |
| 2 | | 5 | 5 | 6 |
| 3 | 1 | 4 | 7 | 1 |
| 4 | 1 | 2 | 6 | 6 |
| 5 | | 2 | 3 | |
| 6 | 1 | | 2 | 1 |
| 7 | | | 2 | |
| TOTALS | 3 | 15 | 31 | 16 |

7. Which of these qualities in yourself has developed most as a result of your work experience?

| WORK PERIOD | YOUR JUDGEMENT | YOUR SELF-CONFIDENCE | YOUR LEADER-SHIP ABILITY |
|---|---|---|---|
| 1 | 7 | 3 | |
| 2 | 9 | 7 | |
| 3 | 8 | 5 | |
| 4 | 5 | 9 | 1 |
| 5 | 1 | 3 | 1 |
| 6 | 1 | 3 | |
| 7 | 1 | | 1 |
| TOTALS | 32 | 30 | 3 |

8. Training to prepare you for managerial positions should be given:

| WORK PERIOD | AT COLLEGE | ON-THE-JOB | IN SCHOOL & AT WORK | IS NOT NECESSARY |
|---|---|---|---|---|
| 1 | | 10 | | |
| 2 | | 3 | 13 | |
| 3 | | 1 | 12 | |
| 4 | 1 | | 14 | |
| 5 | | 1 | 4 | |
| 6 | | | 4 | |
| 7 | | | 2 | |
| TOTALS | 1 | 15 | 49 | |

9. Have you ever mentioned any weaknesses or deficiencies which you feel exist in the Co-op Program to your supervisor-instructor?

| WORK PERIOD | YES | NO | HAVE NOT NOTICED ANY |
|---|---|---|---|
| 1 | 1 | 4 | 5 |
| 2 | 5 | 9 | 2 |
| 3 | 6 | 2 | 5 |
| 4 | 8 | 5 | 2 |
| 5 | 3 | 1 | 1 |
| 6 | | 2 | 2 |
| 7 | 1 | | 1 |
| TOTALS | 24 | 23 | 18 |

10. Are you, in your own mind, becoming more confident that you have chosen the right field or profession?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 6 | 4 |
| 2 | 14 | 2 |
| 3 | 8 | 5 |
| 4 | 11 | 4 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 1 | 1 |
| TOTALS | 48 | 17 |

11. Are there ever times when you feel your work assignments are "over your head?"

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 1 | 9 |
| 2 | 3 | 13 |
| 3 | 2 | 11 |
| 4 | 5 | 10 |
| 5 | 2 | 3 |
| 6 | 2 | 2 |
| 7 | 1 | 1 |
| TOTALS | 16 | 49 |

12. Are you, right now, ready and able to handle more advanced work?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 15 | 1 |
| 3 | 11 | 2 |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 61 | 4 |

13. Has most of your work here been in your major field?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 6 | 4 |
| 2 | 10 | 6 |
| 3 | 7 | 6 |
| 4 | 10 | 5 |
| 5 | 4 | 1 |
| 6 | 2 | 2 |
| 7 | | 2 |
| TOTALS | 39 | 26 |

14. Would you recommend Co-op Education to your friends?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 14 | 2 |
| 3 | 13 | |
| 4 | 13 | 2 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 60 | 5 |

15. Have you had any experiences as a Co-op which might prove helpful in handling managerial or supervisory activities in the future?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 6 | 4 |
| 2 | 10 | 6 |
| 3 | 9 | 4 |
| 4 | 9 | 6 |
| 5 | 4 | 1 |
| 6 | 2 | 2 |
| 7 | 2 | |
| TOTALS | 42 | 23 |

16. Are living conditions (housing, food, etc.) during the work period satisfactory?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 15 | 1 |
| 3 | 13 | |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 60 | 5 |

17. Do you take part in any social activities (dates, join clubs, etc.) during the work periods?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 12 | 4 |
| 3 | 10 | 3 |
| 4 | 14 | 1 |
| 5 | 4 | 1 |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 54 | 11 |

18. Could you, if you were asked, explain how the work of your division relates to the work being done in other divisions of the Arsenal?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 13 | 3 |
| 3 | 11 | 2 |
| 4 | 9 | 6 |
| 5 | 5 | |
| 6 | 1 | 3 |
| 7 | 2 | |
| TOTALS | 49 | 16 |

19. Have you ever applied for a different assignment at this installation?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | | 10 |
| 2 | 3 | 13 |
| 3 | 4 | 9 |
| 4 | 6 | 9 |
| 5 | 1 | 4 |
| 6 | 2 | 2 |
| 7 | 1 | 1 |
| TOTALS | 17 | 48 |

IF YOUR ANSWER TO "19" WAS YES:

19. a Did you get a change in assignments?

| WORK PERIOD | YES | NO | NOT YET |
|---|---|---|---|
| 1 | | | |
| 2 | | 1 | 1 |
| 3 | 3 | 1 | |
| 4 | 4 | 2 | |
| 5 | 1 | | |
| 6 | 2 | | |
| 7 | 1 | 1 | |
| TOTALS | 11 | 5 | 1 |

19. b Were you satisfied with the way in which your request for a reassignment was handled?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | | |
| 2 | | 1 |
| 3 | 3 | 1 |
| 4 | 5 | 1 |
| 5 | 1 | |
| 6 | 2 | |
| 7 | | 1 |
| TOTALS | 11 | 4 |

20. Do you feel that education is a continuous process, in operation on the job, as well as in the classroom?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 14 | 2 |
| 3 | 13 | |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 61 | 4 |

21. Are you trying to continue your formal education during the work sessions, by studying at night, or possibly by taking some courses in night school or through extension schools?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 5 | 5 |
| 2 | 7 | 9 |
| 3 | 6 | 7 |
| 4 | 8 | 7 |
| 5 | 2 | 3 |
| 6 | 2 | 2 |
| 7 | 2 | |
| TOTALS | 32 | 33 |

22. Would you encourage your friends to enter the MICOM Co-op Program?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 14 | 2 |
| 3 | 11 | 2 |
| 4 | 10 | 5 |
| 5 | 4 | 1 |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 52 | 13 |

23. Does it appear that the jobs given the Co-op Students have been chosen primarily for their educational value?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 5 | 5 | |
| 2 | 11 | 5 | |
| 3 | 6 | 6 | 1 |
| 4 | 5 | 10 | |
| 5 | 3 | 2 | |
| 6 | 2 | 2 | |
| 7 | 1 | 1 | |
| TOTALS | 33 | 31 | 1 |

24. Would you like to have specialized training to prepare yourself for supervisory or managerial positions?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 7 | 3 |
| 2 | 12 | 4 |
| 3 | 10 | 3 |
| 4 | 11 | 4 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 50 | 15 |

25. Should your college keep in closer touch with you during the work phase, possibly by having the Co-op Coordinator visit here?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 7 | 3 | |
| 2 | 7 | 9 | |
| 3 | 7 | 5 | 1 |
| 4 | 11 | 4 | |
| 5 | 2 | 3 | |
| 6 | 1 | 3 | |
| 7 | 2 | | |
| TOTALS | 37 | 27 | 1 |

26. During the work session do you receive training and experience which could not be duplicated in your college classrooms or laboratories?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 14 | 2 |
| 3 | 10 | 3 |
| 4 | 8 | 7 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 1 | 1 |
| TOTALS | 52 | 13 |

27. Is it worthwhile for a Co-op Student to continue some academic study during work sessions, either on his own or supervised study?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 7 | 3 |
| 2 | 15 | 1 |
| 3 | 12 | 1 |
| 4 | 15 | |
| 5 | 2 | 3 |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 56 | 9 |

28. Are the work sessions of the Co-op Program actually:

a. The sutdent's laboratory in which he learns the details of his profession?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 14 | 2 |
| 3 | 9 | 4 |
| 4 | 11 | 4 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 53 | 12 |

b. An aid to the student in appraising and developing his personal qualities?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 16 | |
| 3 | 12 | 1 |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 1 | 1 |
| TOTALS | 60 | 5 |

c. An opportunity for the student to discover what his chosen career field really entails?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 13 | 3 |
| 3 | 11 | 2 |
| 4 | 13 | 2 |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 57 | 8 |

28. (Continued) Are the work sessions of the Co-op Program actually:

d. A chance for the student to find out the extent to which personalities and people enter into his on-the-job problems?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 16 | |
| 3 | 13 | |
| 4 | 15 | |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 65 | |

e. Giving the student a chance to obtain pre-professional or professional experience in his field?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 9 | 1 | |
| 2 | 16 | | |
| 3 | 10 | 2 | 1 |
| 4 | 9 | 6 | |
| 5 | 3 | 2 | |
| 6 | 2 | 2 | |
| 7 | 1 | 1 | |
| TOTALS | 50 | 14 | 1 P |

f. An essential part of his education?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 9 | 1 | |
| 2 | 16 | | |
| 3 | 10 | 2 | 1 |
| 4 | 9 | 6 | |
| 5 | 3 | 2 | |
| 6 | 2 | 2 | |
| 7 | 1 | 1 | |
| TOTALS | 50 | 14 | 1 |

28. (Continued) Are the work sessions of the Co-op Program actually:

g. Giving the student a chance to find out what he does <u>not</u> want to do?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 13 | 3 |
| 3 | 13 | |
| 4 | 13 | 2 |
| 5 | | 1 |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 58 | 7 |

h. Giving the student a better insight into the attitudes and opinions of those around him?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 16 | |
| 3 | 13 | |
| 4 | 15 | |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 65 | |

i. Providing the student with a sound basis for finding his proper vocation in life?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 10 | | |
| 2 | 14 | 2 | |
| 3 | 12 | 1 | |
| 4 | 13 | 1 | 1 |
| 5 | 5 | | |
| 6 | 3 | 1 | |
| 7 | 1 | 1 | |
| TOTALS | 58 | 6 | 1 |

IN THE FOLLOWING, WHICH STATEMENT DO YOU FEEL BEST FITS YOUR PARTICULAR JOB SITUATION:

29. Most of the knowledge you've acquired on-the-job has come from:

| WORK PERIOD | DIGGING IT OUT YOURSELF | YOUR INSTR- SUPERVISORS | YOUR CO-WORKERS | NO SIGNIF GAIN IN KNOW |
|---|---|---|---|---|
| 1 | 3 | 1 | 6 | |
| 2 | 2 | 6 | 7 | 1 |
| 3 | 4 | 2 | 7 | |
| 4 | 2 | 6 | 7 | |
| 5 | | 2 | 3 | |
| 6 | 1 | 1 | 2 | |
| 7 | | 2 | | |
| TOTALS | 12 | 18 | 34 | 1 |

30. What do you think of the scheduled off-the-job training meetings?

| WORK PERIOD | WELL WORTH WHILE | GOOD LEARN SITUATION | ROOM TO IMPROVE | WASTE OF TIME | UN- DECIDED |
|---|---|---|---|---|---|
| 1 | 1 | 4 | 1 | | 4 |
| 2 | 1 | 10 | | | 5 |
| 3 | | 3 | 2 | 2 | 6 |
| 4 | | 5 | 3 | 1 | 6 |
| 5 | 1 | 2 | 1 | | 1 |
| 6 | | 1 | | 1 | 2 |
| 7 | | | | | 2 |
| TOTALS | 3 | 25 | 7 | 4 | 26 |

31. How does your work compare with the difficulty of your course work in college?

| WORK PERIOD | BOTH ABOUT THE SAME | ON-JOB MORE ADV THAN SCH | COLLEGE MORE THAN WORK | UNDECIDED |
|---|---|---|---|---|
| 1 | 3 | | 7 | |
| 2 | 2 | 2 | 11 | 1 |
| 3 | 2 | 4 | 7 | |
| 4 | 3 | 1 | 11 | |
| 5 | | 2 | 3 | |
| 6 | 1 | | 3 | |
| 7 | | 1 | 1 | |
| TOTALS | 11 | 10 | 43 | 1 |

32. In deciding to become a Co-op, the opportunity to earn money:

| WORK PERIOD | COUNTED HEAVILY | PROBABLY MOST IMPORT FACTOR | MADE VERY LITTLE DIFFERENCE |
|---|---|---|---|
| 1 | 3 | 4 | 3 |
| 2 | 9 | 4 | 3 |
| 3 | 4 | 6 | 3 |
| 4 | 7 | 3 | 5 |
| 5 | 1 | 4 | |
| 6 | 2 | 3 | |
| 7 | 2 | | |
| TOTALS | 28 | 23 | 14 |

33. Each of your new work assignments requires:

| WORK PERIOD | MORE KNOW AND RESPON | NO INCREASE IN KNOW AND SKILL | ASSIGN STAY ABOUT SAME | NOT BEEN ASSGN NEW TASK |
|---|---|---|---|---|
| 1 | 2 | 3 | 3 | 2 |
| 2 | 7 | 2 | 7 | |
| 3 | 7 | 3 | 2 | 1 |
| 4 | 7 | 5 | 3 | |
| 5 | 3 | 1 | 1 | |
| 6 | 3 | 1 | | |
| 7 | 2 | | | |
| TOTALS | 31 | 15 | 16 | 3 |

34. If, at the beginning of each work period, you could choose the place where you were going to work, you would choose:

| WORK PERIOD | SAME DIV EACH TIME | DIFF DIV EACH TIME | DIFF ORGAN EACH TIME | TRANSFER TO DIFF EMPLOYER |
|---|---|---|---|---|
| 1 | 4 | 1 | 2 | 3 |
| 2 | 9 | 5 | 2 | |
| 3 | 6 | 3 | 4 | |
| 4 | 6 | 6 | 3 | |
| 5 | 2 | 2 | 1 | |
| 6 | 1 | | 2 | 1 |
| 7 | 1 | | 1 | |
| TOTALS | 29 | 17 | 15 | 4 |

35. Would you say that your day-to-day work:

| WORK PERIOD | CAREFULLY PLANNED | NO LONG-RNG PLANNING | NO RHYME OR REASON | CHALLENGING & INTERESTING |
|---|---|---|---|---|
| 1 | | | 5 | 5 |
| 2 | | 3 | 7 | 6 |
| 3 | 1 | 4 | 4 | 4 |
| 4 | 2 | 4 | 6 | 3 |
| 5 | | 1 | | 4 |
| 6 | | 1 | 2 | 1 |
| 7 | | | 2 | |
| TOTALS | 3 | 13 | 26 | 23 |

36. Will you be worth more to yourself and your future employer after you graduate than you would if you had not earned your degree through the Co-op Program?

| WORK PERIOD | YES, DEFINITELY | PROBABLY YES | NO, DIFF EITHER WAY | NO, LEARNED MORE IN SCH |
|---|---|---|---|---|
| 1 | 7 | 3 | | |
| 2 | 8 | 7 | | 1 |
| 3 | 10 | 3 | | |
| 4 | 6 | 9 | | |
| 5 | 3 | 2 | | |
| 6 | 3 | 1 | | |
| 7 | 1 | 1 | | |
| TOTALS | 38 | 26 | | |

37. Do most Co-ops you know (including yourself):

| WORK PERIOD | HAVE SAME DUTIES FOR ENTIRE PERIOD | HAVE SAME DUTIES FOR TWO OR MORE | HAVE RESPON CONT INCREASED | FEELS ON MICOM TEAM |
|---|---|---|---|---|
| 1 | 3 | 2 | 2 | 3 |
| 2 | 6 | 4 | 3 | 3 |
| 3 | 3 | 5 | 3 | 2 |
| 4 | 2 | 6 | 4 | 3 |
| 5 | 1 | 1 | 1 | 2 |
| 6 | 2 | | 2 | |
| 7 | | | 2 | |
| TOTALS | 17 | 18 | 17 | 13 |

38. The most valuable way in which a Co-op can use his work sessions is to:

| WORK PERIOD | LEARN ALL OF PARTIC JOB | HOLD AS MANY JOBS AS POSSIBLE WITHIN MAJOR FIELD | ACQUIRE EXP ALSO IN RELATED FIELDS OF WORK | TEST INTEREST & ABILITIES IN MANY FIELDS | UNDECIDED |
|---|---|---|---|---|---|
| 1 | | 3 | 7 | | |
| 2 | | 6 | 6 | 3 | 1 |
| 3 | 1 | 3 | 6 | 3 | |
| 4 | 1 | 4 | 6 | 4 | |
| 5 | | 1 | 3 | 1 | |
| 6 | | 2 | 2 | | |
| 7 | 1 | | 1 | | |
| TOTALS | 3 | 19 | 31 | 1 | |

39. You enjoy most working with:

| WORK PERIOD | PEOPLE | IDEAS | THINGS | UNDECIDED |
|---|---|---|---|---|
| 1 | 4 | 3 | 3 | |
| 2 | 8 | 5 | 2 | 1 |
| 3 | 6 | 2 | 5 | |
| 4 | 5 | 5 | 5 | |
| 5 | 5 | | | |
| 6 | 1 | 2 | 1 | |
| 7 | 2 | | | |
| TOTALS | 31 | 17 | 16 | 1 |

40. What is your supervisor's attitude towards you?

| WORK PERIODS | TEACHES ME ALL HE CAN | PRIME INT PROD NOT PEOPLE | RELUCT TO RELY ON YOUR CAPABIL | EXPECTS EFFECTIVE PERFOR W/ TOO LITTLE GUIDANCE |
|---|---|---|---|---|
| 1 | 4 | 1 | 2 | 3 |
| 2 | 9 | 4 | 2 | 1 |
| 3 | 5 | 3 | 5 | |
| 4 | 6 | 3 | 5 | 1 |
| 5 | 5 | | | |
| 6 | 1 | 2 | | 1 |
| 7 | 1 | 1 | | |
| TOTALS | 31 | 14 | 14 | 6 |

41. As far as you know now, after graduation you will:

| WORK PERIOD | WANT TO RETURN TO MICOM | WANT GOVT EMPL BUT NOT MICOM | NOT CONSIDER MICOM WORK | PROB SEEK EMPL NEARER HOME | UN-DECID |
|---|---|---|---|---|---|
| 1 | 4 | 1 | | 5 | |
| 2 | 5 | 8 | 1 | 1 | 1 |
| 3 | 9 | 1 | 1 | 2 | |
| 4 | 4 | 4 | 5 | 1 | 1 |
| 5 | 3 | 2 | | | |
| 6 | 2 | 1 | 1 | | |
| 7 | 1 | 1 | | | |
| TOTALS | 28 | 18 | 8 | 9 | 2 |

42. Who is benefitting most from the Co-op Program?

| WORK PERIOD | CO-OP STUDENTS | SUPERVISOR | MICOM | ALL ABOUT EQUALLY | UN-DECID |
|---|---|---|---|---|---|
| 1 | 8 | | 1 | 1 | |
| 2 | 8 | 1 | | 6 | 1 |
| 3 | 2 | 1 | | 10 | |
| 4 | 7 | 1 | | 6 | 1 |
| 5 | 5 | | | | |
| 6 | 2 | | | 2 | |
| 7 | 1 | | | 1 | |
| TOTALS | 33 | 3 | 1 | 26 | 2 |

43. Your Co-op work has enabled you:

a. To see principles in operation.

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 15 | 1 |
| 3 | 12 | 1 |
| 4 | 13 | 2 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 60 | 5 |

43. (cont) Your Co-op work has enabled you:

b. To determine to what extent theories can be relied upon in practice, and to what extent the professional employee needs to rely upon his own judgement.

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 12 | 4 |
| 3 | 8 | 5 |
| 4 | 15 | |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 55 | 10 |

c. To recognize and appraise the human factors and social elements within your career field.

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 14 | 2 |
| 3 | 9 | 4 |
| 4 | 15 | |
| 5 | 5 | |
| 6 | 3 | 1 |
| 7 | 2 | |
| TOTALS | 56 | 9 |

44. If you have stayed withthe same element during every work period, did the scope and responsibility of the work given you:

a. Increase at the beginning of each work period?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 2 | 3 | 5 |
| 2 | 7 | 9 | |
| 3 | 5 | 4 | 4 |
| 4 | 6 | 8 | 1 |
| 5 | 2 | 3 | |
| 6 | 1 | 2 | 1 |
| 7 | 1 | | 1 |
| TOTALS | 24 | 29 | 12 |

44. (Cont) If you have stayed with the same element during every work period, did the scope and responsibility of the work given you:

b. Increase whenever your supervisor-instructor felt you could handle it?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 4 | 2 | 4 |
| 2 | 10 | 6 | |
| 3 | 7 | 2 | 4 |
| 4 | 8 | 6 | 1 |
| 5 | 5 | | |
| 6 | 3 | | 1 |
| 7 | 1 | | 1 |
| TOTALS | 38 | 16 | 11 |

44. c. Increase so slightly it became uninteresting?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 1 | 3 | 6 |
| 2 | 8 | 8 | |
| 3 | 3 | 6 | 4 |
| 4 | 7 | 8 | |
| 5 | 2 | 3 | |
| 6 | 1 | 2 | 1 |
| 7 | | 1 | 1 |
| TOTALS | 22 | 31 | 12 |

45. Is your work experience giving you:

a. Practical capabilities beyond what your courses could give you?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 15 | 1 |
| 3 | 13 | |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 62 | 3 |

45. (Cont) Is your work experience giving you:

b. Familiarity with equipment not available in college laboratory?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 10 | 6 |
| 3 | 12 | 1 |
| 4 | 14 | 1 |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 55 | 10 |

c. A better understanding of your own interests, aptitudes, and how to become a professional in your career field?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 10 | |
| 2 | 15 | 1 |
| 3 | 12 | 1 |
| 4 | 15 | |
| 5 | 5 | |
| 6 | 4 | |
| 7 | 2 | |
| TOTALS | 63 | 2 |

46. Have all your experiences been within the same Branch?

| WORK PERIOD | YES | NO |
|---|---|---|
| 1 | 8 | 2 |
| 2 | 12 | 4 |
| 3 | 6 | 7 |
| 4 | 6 | 9 |
| 5 | 2 | 3 |
| 6 | 2 | 2 |
| 7 | 1 | 1 |
| TOTALS | 37 | 28 |

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

47. STATEMENTS

| | ORDER OF IMPORTANCE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
| a. Ability to get along with others | 20 | 8 | 16 | 11 | 5 | 4 | 1 | 65 |
| b. Practical experience and job "know-how" | 14 | 13 | 13 | 6 | 9 | 6 | 4 | 65 |
| c. Mental alertness | 8 | 9 | 11 | 9 | 16 | 10 | 2 | 65 |
| d. Mastery of principles and theories fundamental to my study major | 11 | 9 | 8 | 10 | 11 | 8 | 8 | 65 |
| e. Outgoing, forceful, and agressive personality characteristics | 0 | 4 | 3 | 4 | 6 | 11 | 37 | 65 |
| f. Communication skills (reading, writing, speaking, and listening) | 5 | 10 | 7 | 15 | 12 | 14 | 2 | 65 |
| g. Well rounded educational background | 7 | 12 | 7 | 10 | 6 | 12 | 11 | 65 |
| SUMMARY TOTALS | 65 | 65 | 65 | 65 | 65 | 65 | 65 | |

NOTE
(The next seven charts show the break-down by work period)

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

(1ST WORK PERIOD)

| 47. STATEMENTS | ORDER OF IMPORTANCE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
| a. Ability to get along with others | 2 | 3 | 1 | 4 | | | | |
| b. Practical experience and job "know-how" | 2 | 2 | 2 | | 1 | | 3 | |
| c. Mental alertness | 1 | 2 | 2 | | 2 | 3 | | |
| d. Mastery of principles and theories fundamental to my study major | 1 | 2 | 1 | 3 | | 2 | 1 | |
| e. Outgoing, forceful, and agressive personality characteristics | | | | | 5 | 2 | 3 | |
| f. Communication skills (reading, writing, speaking, and listening) | 3 | | 1 | 2 | | 2 | 2 | |
| g. Well rounded educational background | 1 | 1 | 3 | 1 | 2 | 1 | 1 | |
| ~~SUMMARY TOTALS~~ | | | | | | | | |
| (10 Co-ops) | | | | | | | | |

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

(2ND WORK PERIOD)

47. STATEMENTS

| | ORDER OF IMPORTANCE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
| a. Ability to get along with others | 4 | 3π | 4 | 2 | 1 | 1 | 1 | |
| b. Practical experience and job "know-how" | 6 | 3 | 2 | 1 | 2 | 1 | 1 | |
| c. Mental alertness | 1 | 2 | 2 | 2 | 5 | 3 | 1 | |
| d. Mastery of principles and theories fundamental to my study major | 3 | 3 | 5 | | 2 | 1 | 2 | |
| e. Outgoing, forceful, and agressive personality characteristics | | 1 | 1 | 3 | | 3 | 8 | |
| f. Communication skills (reading, writing, speaking, and listening) | | 1 | 2 | 6 | 4 | 3 | | |
| g. Well rounded educational background | 2 | 3 | | 2 | 2 | 4 | 3 | |
| ~~SUMMARY TOTALS~~ | | | | | | | | |

(16 Co-ops)

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

47. STATEMENTS

(3RD WORK PERIOD)
ORDER OF IMPORTANCE

| STATEMENTS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
|---|---|---|---|---|---|---|---|---|
| a. Ability to get along with others | 5 | | 5 | 1 | 1 | 1 | | |
| b. Practical experience and job "know-how" . | 2 | 3 | | 2 | 3 | 3 | | |
| c. Mental alertness | 2 | 1 | 2 | 4 | 3 | | 1 | |
| d. Mastery of principles and theories fundamental to my study major | 2 | 1 | 1 | 3 | 4 | 2 | | |
| e. Outgoing, forceful, and agressive personality characteristics | | 1 | 1 | | | 4 | 7 | |
| f. Communication skills (reading, writing, speaking, and listening) | 2 | 5 | 3 | 2 | 1 | | | |
| g. Well rounded educa-tional background | | 2 | 1 | 1 | 1 | 3 | 5 | |
| ~~SUMMARY TOTALS~~ (13 Co-op) | | | | | | | | |

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

47. STATEMENTS

(4TH WORK PERIOD)
ORDER OF IMPORTANCE

| STATEMENTS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
|---|---|---|---|---|---|---|---|---|
| a. Ability to get along with others | 6 | 1 | 3 | 1 | 2 | 2 | | |
| b. Practical experience and job "know-how" | 2 | 4 | 4 | 2 | 2 | 1 | | |
| c. Mental alertness | 3 | 2 | 2 | 2 | 3 | 3 | | |
| d. Mastery of principles and theories fundamental to my study major | 3 | 1 | 2 | 3 | 2 | 2 | 2 | |
| e. Outgoing, forceful, and agressive personality characteristics | | 1 | 1 | | 1 | 1 | 11 | |
| f. Communication skills (reading, writing, speaking, and listening) | | 2 | 1 | 4 | 4 | 4 | | |
| g. Well rounded educational background | 1 | 4 | 2 | 3 | 1 | 2 | 2 | |
| SUMMARY TOTALS | | | | | | | | |

(15 Co-ops)

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

(5TH WORK PERIOD)

47. STATEMENTS

| ORDER OF IMPORTANCE | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
| a. Ability to get along with others | 2 | 1 | 1 | 1 | | | | |
| b. Practical experience and job "know-how" | | 1 | 2 | 1 | 1 | | | |
| c. Mental alertness | 1 | | 1 | 1 | 1 | 1 | | |
| d. Mastery of principles and theories fundamental to my study major | | 1 | | | 2 | 1 | 1 | |
| e. Outgoing, forceful, and agressive personality characteristics | | | | | | 1 | 4 | |
| f. Communication skills (reading, writing, speaking, and listening) | | 2 | | | 1 | 2 | | |
| g. Well rounded educational background | 2 | | 1 | 2 | | | | |
| ~~SUMMARY TOTALS~~ | | | | | | | | |
| (5 Co-ops) | | | | | | | | |

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

47. STATEMENTS

(6TH WORK PERIOD)
ORDER OF IMPORTANCE

| STATEMENTS | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
|---|---|---|---|---|---|---|---|---|
| a. Ability to get along with others | 1 | | 1 | 1 | 1 | | | |
| b. Practical experience and job "know-how" | 1 | | 3 | | | | | |
| c. Mental alertness | | 2 | 1 | | 1 | | | |
| d. Mastery of principles and theories fundamental to my study major | 2 | | | 1 | 1 | | | |
| e. Outgoing, forceful, and agressive personality characteristics | | | | 1 | | | 3 | |
| f. Communication skills (reading, writing, speaking, and listening) | | | | | 1 | 3 | | |
| g. Well rounded educational background | | 2 | | 1 | | 1 | | |
| ~~SUMMARY TOTALS~~ (4 Co-ops) | | | | | | | | |

THE FOLLOWING STATEMENTS DEAL WITH FACTORS GENERALLY CONSIDERED TO PLAY AN IMPORTANT PART IN THE SUCCESS ACHIEVED BY AN INDIVIDUAL IN HIS CHOSEN FIELD. ARRANGE THESE STATEMENTS IN ORDER OF THEIR IMPORTANCE, BY NUMBER: E. G., GIVE NUMBER 1 TO THE MOST IMPORTANT STATEMENT, NUMBER 2 TO THE NEXT MOST IMPORTANT, ETC.

47. STATEMENTS

(7TH WORK PERIOD)
ORDER OF IMPORTANCE

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | TOTAL CO-OPS |
|---|---|---|---|---|---|---|---|---|
| a. Ability to get along with others | | | 1 | 1 | | | | |
| b. Practical experience and job "know-how" | 1 | | | | | 1 | | |
| c. Mental alertness | | | 1 | | 1 | | | |
| d. Mastery of principles and theories fundamental to my study major | | 1 | | | | | 1 | |
| e. Outgoing, forceful, and agressive personality characteristics | | 1 | | | | | 1 | |
| f. Communication skills (reading, writing, speaking, and listening) | | | | 1 | 1 | | | |
| g. Well rounded educational background | 1 | | | | | 1 | | |
| ~~SUMMARY TOTALS~~ | | | | | | | | |

( 2 Co-ops)

48. Name the organizational elements in which you've worked.

(This data is of interest only as it concerns the individual)

49. Number of work periods you have spent in each element and the time spent in months.
(This data is of interest only as it concerns the individual)

DO YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS?

50. Specialization in one's chosen field should come after graduation, either from practical experience acquired on the job, or from advanced study.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | 8 | 2 | |
| 2 | 8 | 8 | |
| 3 | 11 | 2 | |
| 4 | 9 | 6 | |
| 5 | 4 | 1 | |
| 6 | 4 | | |
| 7 | 1 | 1 | |
| TOTALS | 45 | 20 | |

51. Theoretically, we can learn everything out of books without practicing.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | | 10 | |
| 2 | 1 | 15 | |
| 3 | 1 | 12 | |
| 4 | 2 | 13 | |
| 5 | | 5 | |
| 6 | 1 | 3 | |
| 7 | 1 | 1 | |
| TOTALS | 6 | 59 | |

52. In working out real problems in his particular field during the work period, a Co-op acquires, to some degree, the art of educating himself.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | 9 | 1 | |
| 2 | 16 | | |
| 3 | 13 | | |
| 4 | 15 | | |
| 5 | 5 | | |
| 6 | 4 | | |
| 7 | 2 | | |
| TOTALS | 64 | 1 | |

53. A good education in engineering, science, or any other professional field should also include some preparation for positions in management.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | 9 | 1 | |
| 2 | 15 | | 1 |
| 3 | 12 | 1 | |
| 4 | 13 | 2 | |
| 5 | 5 | | |
| 6 | 3 | 1 | |
| 7 | 2 | | |
| TOTALS | 59 | 5 | 1 |

54. A frequent criticism of the Co-op Program is that the cooperative plan turns college education into glorified job training.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | 3 | 7 | |
| 2 | 2 | 13 | 1 |
| 3 | 2 | 11 | |
| 4 | 3 | 12 | |
| 5 | | 5 | |
| 6 | 2 | 2 | |
| 7 | 1 | 1 | |
| TOTALS | 13 | 51 | 1 |

55. Learning is best achieved by doing, rather than by merely being receptive to the efforts of teachers and the classroom atmosphere.

| WORK PERIOD | AGREE | DISAGREE | UNDECIDED |
|---|---|---|---|
| 1 | 10 | | |
| 2 | 15 | 1 | |
| 3 | 12 | 1 | |
| 4 | 14 | 1 | |
| 5 | 5 | | |
| 6 | 4 | | |
| 7 | 2 | | |
| TOTALS | 62 | 3 | |

ESSAY PORTION

INDICATE BRIEFLY YOUR UNDERSTANDING OF EACH OF THE FOLLOWING:

1. What is the mission of the Research and Engineering Directorate?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW |
|---|---|---|
| 1 | 9 | 1 |
| 2 | 13 | 3 |
| 3 | 12 | 1 |
| 4 | 8 | 7 |
| 5 | 3 | 2 |
| 6 | 3 | 1 |
| 7 | 1 | 1 |
| TOTALS | 49 | 16 |

2. What is the mission of the Procurement and Production Directorate?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW |
|---|---|---|
| 1 | 7 | 3 |
| 2 | 9 | 7 |
| 3 | 10 | 3 |
| 4 | 8 | 7 |
| 5 | 3 | 2 |
| 6 | 1 | 3 |
| 7 | 1 | 1 |
| TOTALS | 39 | 26 |

3. What is the mission of the Supply and Maintenance Directorate?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW |
|---|---|---|
| 1 | 5 | 5 |
| 2 | 6 | 10 |
| 3 | 8 | 5 |
| 4 | 7 | 8 |
| 5 | 2 | 3 |
| 6 | | 4 |
| 7 | 1 | 1 |
| TOTALS | 29 | 36 |

4. What is the mission of the Missile Intelligence Directorate?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW |
|---|---|---|
| 1 | 3 | 7 |
| 2 | 6 | 10 |
| 3 | 9 | 4 |
| 4 | 6 | 9 |
| 5 | 1 | 4 |
| 6 | 1 | 3 |
| 7 | 1 | 1 |
| TOTALS | 27 | 38 |

5. What is the mission of the Arsenal Support Operations Directorate?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW |
|---|---|---|
| 1 | 3 | 7 |
| 2 | 9 | 7 |
| 3 | 8 | 5 |
| 4 | 8 | 7 |
| 5 | 3 | 2 |
| 6 | 2 | 2 |
| 7 | 2 | |
| TOTALS | 35 | 30 |

6. What is the objective of the Cooperative Education Program?

| WORK PERIOD | DOES KNOW | DOES NOT KNOW | UNDECIDED |
|---|---|---|---|
| 1 | 10 | | |
| 2 | 15 | | 1 |
| 3 | 10 | 3 | |
| 4 | 15 | | |
| 5 | 5 | | |
| 6 | 3 | 1 | |
| 7 | 2 | | |
| TOTALS | 60 | 4 | 1 |

7. So far, has it been to your advantage to acquire your education through the Co-op Program, rather than through a Standard four-year program?

| WORK PERIOD | YES | NO | UNDECIDED |
|---|---|---|---|
| 1 | 7 | 2 | 1 |
| 2 | 15 | | 1 |
| 3 | 12 | 1 | |
| 4 | 13 | 2 | |
| 5 | 5 | | |
| 6 | 4 | | |
| 7 | 2 | | |
| TOTALS | 58 | 5 | 2 |

a. If not, why?

(1) 1st Period - Work not related to studies yet(2) Too early to tell yet. (1)
(2) 2nd Period - No comment (1)
(3) 3rd Period - No comment (1)
(4) 4th Period - No comment (2)

8. Possibly you have taken part in a Cooperative Program with industry before joining MICOM's program. If you have, compare their program with MICOM's. Point out similiarities and differences between the two programs, and the advantages of one program over the other.

| WORK PERIOD | HAS PARTICIPATED | HAS NOT PARTICIPATED |
|---|---|---|
| 1 | | 10 |
| 2 | 1 | 15 |
| 3 | 1 | 12 |
| 4 | | 15 |
| 5 | | 55 |
| 6 | | 4 |
| 7 | | 2 |
| TOTALS | 2 | 63 |

Comparisons:

2nd Work Period - Declined to compare (1)

3rd Work Period - Similar work though TVA has no Co-op Coordinator (1)

9. What are the best features of the Co-op Program?

| FEATURES | NO. OF TIMES EXPRESSED |
|---|---|
| 1. No home-work or studying | 2 |
| 2. Experience supplements theoretical study | 8 |
| 3. Learns to get along with others | 7 |
| 4. Learns how to apply study knowledge | 8 |
| 5. Learning while earning | 21 |
| 6. Learns what one's chosen field is like | 9 |
| 7. Experience affords more responsibilities | 8 |
| 8. Learns to be independent | 3 |
| 9. Breaks monotony of school | 8 |
| 10. Opportunity to work with latest equipment | 2 |
| 11. RSA Rocket received while at school | 1 |
| 12. TDY with professionals | 1 |
| TOTAL | 79 |

Note:
Some co-ops listed more than one best feature

11. What are some ways of improving our program?

| WAYS OF IMPROVING | NO. OF TIMES EXPRESSED |
|---|---|
| 1. No suggestions | 17 |
| 2. Make sure co-op is properly assigned | 8 |
| 3. Assign jobs that are interesting | 5 |
| 4. Get more companies interested in program | 1 |
| 5. Allow Co-op to change employers and return to the one he prefers | 1 |
| 6. Better communication between student, school, and employer | 3 |
| 7. Increase pay each work period | 10 |
| 8. Hold co-op meetings | 6 |
| 9. Give more independent assignments | 6 |
| 10. Give step raises within grades | 2 |
| 11. Coordinator check-ups at students' work sites | 4 |
| 12. Acquaint the co-op with Arsenal earlier | 1 |
| 13. Pay travel between school and work | 3 |
| 14. Eliminate red-tape formalities | 2 |
| 15. Hold last check until co-op returns to duty | 1 |
| 16. Allow Co-op to choose his job | 2 |
| 17. Assign co-ops to different work site each period | 3 |
| TOTAL | 75 |

12. What advantages do you see in accepting a full-time position at this installation after you graduate?

| ADVANTAGES | NO. OF TIMES EXPRESSED |
|---|---|
| 1. None cited | 2 |
| 2. Good salary and job readiness | 5 |
| 3. Immediate productivity from experience | 15 |
| 4. Working with people you already know | 6 |
| 5. Govt benefits are better than industry's | 9 |
| 6. Possible deferment if working with Army | 3 |
| 7. Guaranteed a job with no lay offs | 2 |
| 8. Know what's going on from past associations | 6 |
| 9. Money being earned | 3 |
| 10. Work with most up-to-date equipment in world | 1 |
| 11. Job security and advancement opportunities | 13 |
| 12. Opportunity for continuing education | 5 |
| 13. Progressiveness of Huntsville and its location | 2 |
| TOTAL | 72 |

10. What are some of the things you don't like about the Co-op Program?

| DISLIKES OF PROGRAM | NO. OF TIMES EXPRESSED |
|---|---|
| 1. None | 16 |
| 2. Work which is below level of capability | 7 |
| 3. Too often not enough work in major | 7 |
| 4. Not enough employers involved, to allow Co-op to work with whom he chooses | 1 |
| 5. Not enough pay | 14 |
| 6. No vacations between school and work | 1 |
| 7. First work period too slow and dull | 1 |
| 8. Courses offered in summer and winter quarters not as good as fall & spring | 1 |
| 9. Co-workers think of a co-op as a part-time employee | 2 |
| 10. Involvement with school coordinators | 1 |
| 11. Lack of individual projects assigned | 1 |
| 12. Supervisors lack time to train new co-ops or assign work projects | 3 |
| 13. Difficult to schedule courses where school is far from work site | 1 |
| 14. It takes 5 years | 4 |
| 15. Red-tape formalities | 2 |
| 16. Moving each semester | 4 |
| TOTAL | 66 |

13. What are some of the disadvantages of becoming a permanent full-time employee at this installation after graduation?

| DISADVANTAGES | NO. OF TIMES EXPRESSED |
|---|---|
| 1. None cited | 16 |
| 2. Seems it would be too difficult to change co-workers' image of the Co-op to a professional engineer | 2 |
| 3. Work is routine and uninteresting | 12 |
| 4. Low pay and/or too far from hometown | 14 |
| 5. Dislike of Ala and Huntsville. Standard of living too high. | 5 |
| 6. People - that is, people who are complacent with the state they are in . . . but they are in industry as well as Civ Serv | 3 |
| 7. Work is repetitious. Discontent exists between departments | 1 |
| 8. More opportunities to advance in industry | 8 |
| 9. Falling into a bureaucratic nothingness | 1 |
| 10. Promotion freezes and RIF's | 3 |
| 11. Afraid to pass up security to find out other possible opportunities | 2 |
| 12. Rules and regs stifle initiative | 2 |
| TOTAL | 69 |